

U.S. Patent Appln. No. 09/890,550
Amendment
Response to Final Office Action dated July 28, 2005

Docket No. 2000-22

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-42. (Cancelled)

43. (Previously presented) A wafer grinder table having a grinding surface for grinding a semiconductor wafer held on a wafer holding plate, the table comprising:
a plurality of base materials, each of which is a ceramic-metal composite formed by impregnating metal silicon in opened pores of a porous body made of silicon-containing ceramic, wherein the ceramic-metal composite has a thermal conductivity of $100 \text{ W/m} \cdot \text{K}$ or more;
a bonding layer formed from the metal silicon to bond the base materials; and
a fluid passage formed in a bonding interface of the base materials.

44. (Previously presented) The wafer grinder table according to claim 43, wherein, in the ceramic-metal composite, the porous body includes silicon carbide crystals with an average grain diameter of $20\mu\text{m}$ to $100\mu\text{m}$, has a porosity of 10% to 50%, and has a thermal conductivity of $160 \text{ W/m} \cdot \text{K}$ or more, and wherein 100 parts by weight of silicon carbide is impregnated with 15 parts by weight to 50 parts by weight of the metal silicon.

45. (Previously presented) The wafer grinder table according to claim 43, wherein the silicon carbide crystals include 10vol% to 50vol% of fine silicon carbide crystals, which have an average grain diameter of $0.1\mu\text{m}$ to $1.0\mu\text{m}$ and 50vol% to 90vol% of rough silicon carbide crystals, which have an average grain diameter of $25\mu\text{m}$ to $150\mu\text{m}$.

46. (Previously presented) The wafer grinder table according to claim 43, wherein the bonding layer has a thickness of $10\mu\text{m}$ to $1500\mu\text{m}$.

47. (Cancelled)

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48. (Currently amended) ~~The A wafer grinder table according to claim 47, having a grinding surface for grinding a semiconductor wafer held on a wafer holding plate, the table comprising:~~

a plurality of bonded base materials, each formed from a silicon carbide-metal composite, wherein the silicon carbide-metal composite has a thermal conductivity of 100 W/m • K or more;
and

a fluid passage formed in a bonding interface of the base materials,

wherein the silicon carbide-metal composite has a porous structure formed by silicon carbide crystals that includes opened pores, wherein the opened pores are impregnated with metal, wherein the silicon carbide-metal composite has a silicon carbide crystal average grain diameter of 20µm or greater, a porosity of 30% or less, and a thermal conductivity of 160W/m • K or more, and wherein 100 parts by weight of silicon carbide is impregnated with 15 parts by weight to 50 parts by weight of metal.

49. (Currently amended) ~~The A wafer grinder table according to claim 47, having a grinding surface for grinding a semiconductor wafer held on a wafer holding plate, the table comprising:~~

a plurality of bonded base materials, each formed from a silicon carbide-metal composite, wherein the silicon carbide-metal composite has a thermal conductivity of 100 W/m • K or more;
and

a fluid passage formed in a bonding interface of the base materials,

wherein the silicon carbide-metal composite has a porous structure formed by silicon carbide crystals that includes opened pores, wherein the opened pores are impregnated with metal, wherein the silicon carbide-metal composite has a silicon carbide crystal average grain diameter of 20µm to 100µm, a porosity of 5% to 30%, and a thermal conductivity of 160W/m • K or more, and wherein 100 parts by weight of silicon carbide is impregnated with 15 parts by weight to 50 parts by weight of metal.

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50. (Previously presented) The wafer grinder table according to claim 43, wherein the fluid passage is one of a plurality of fluid passages.

51. (Previously presented) The wafer grinder table according to claim 43, wherein the metal silicon of the bonding layer are continuous and have no boundaries.

52. (Currently amended) The wafer grinder table according to claim ~~[[47]]~~ 53, wherein the fluid passage is one of a plurality of fluid passages.

53. (Currently amended) ~~The A~~ wafer grinder table according to claim ~~47~~, further comprising having a grinding surface for grinding a semiconductor wafer held on a wafer holding plate, the table comprising:

a plurality of bonded base materials, each formed from a silicon carbide-metal composite, wherein the silicon carbide-metal composite has a thermal conductivity of 100 W/m • K or more;
a bonding layer formed from the metal silicon to bond the base materials; and
a fluid passage formed in a bonding interface of the base materials.

54. (Previously presented) The wafer grinder table according to claim 53, wherein the metal silicon of the bonding layer are continuous and have no boundaries.